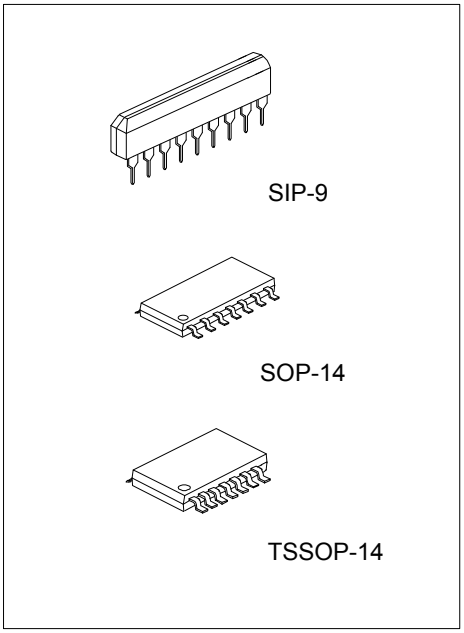
BA3308

LINEAR INTEGRATED CIRCUIT

DUAL PREAMPLIFIER WITH ALC



■ DESCRIPTION

The UTC **BA3308** is designed to have dual preamplifier ICs with built – in ALC circuits for use in stereo amplification. The preamplifiers have high gain and low distortion. A built-in rectifier for ALC circuit implies good channel balance and large dynamic range can be constructed with addition of just an external time constant circuit.

■ FEATURES

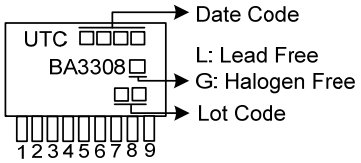
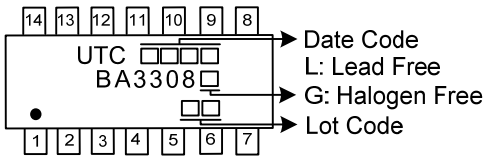
* Wide operating power supply voltage range (V_{CC} =4.5V ~ 14V)
* Power-on mute circuit to avoid “pop” noise generation.
* No input coupling capacitors are necessary
* High gain (G_{VO}=80dB)and low noise (V_{NIN}=1μVrms)
* Low distortion (THD=0.1%)
* Good ALC channel balance with built-in ALC rectifier diode
* Adjustable ALC dynamic range by external input resistor.

■ ORDERING INFORMATION

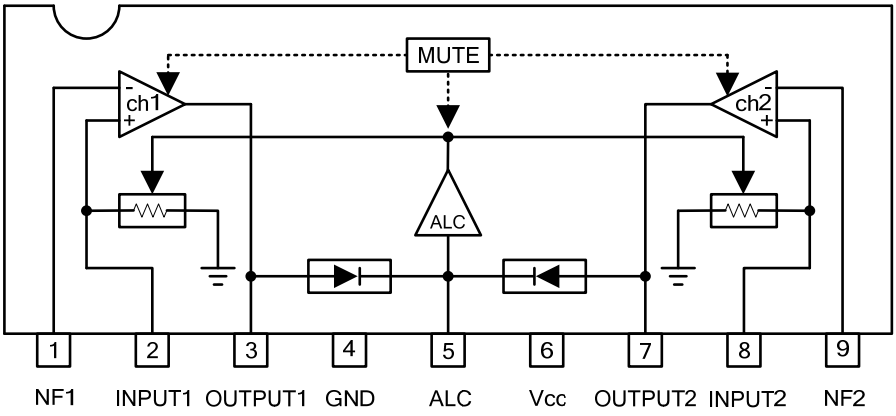
Ordering Number		Package	Packing
Lead Free	Halogen Free		
BA3308L-G09-T	BA3308G-G09-T	SIP-9	Tube
BA3308L-S14-R	BA3308G-S14-R	SOP-14	Tape Reel
BA3308L-P14-R	BA3308G-P14-R	TSSOP-14	Tape Reel

BA3308G-G09-T (1)Packing Type (2)Package Type (3)Green Package	(1) T: Tube, R: Tape Reel (2) G09: SIP-9, S14: SOP-14, P14: TSSOP-14 (3) G: Halogen Free and Lead Free, L: Lead Free

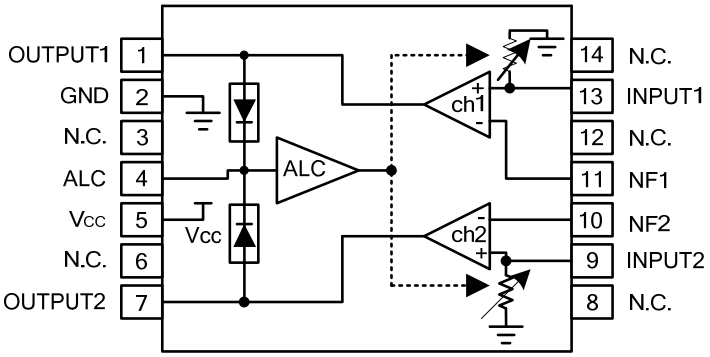
■ MARKING

SIP-9	SOP-14 / TSSOP-14
	

■ BLOCK DIAGRAM



SIP-9



SOP-14 / TSSOP-14

■ ABSOLUTE MAXIMUM RATING (T_A =25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Power Supply Voltage		V_{CC}	16	V
Power Dissipation	SIP-9	P_D	950	mW
	SOP-14		450	mW
	TSSOP-14		350	mW
Derating above (T_A=25°C)	SIP-9		9.5	°C/mW
	SOP-14		4.5	°C/mW
	TSSOP-14		3.5	°C/mW
Operating Temperature		T_{OPR}	-25 ~ +85	°C
Storage Temperature		T_{STG}	-65 ~ +125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS (T_A =25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Power Supply Voltage	V_{CC}	+4.5 ~ +14	V

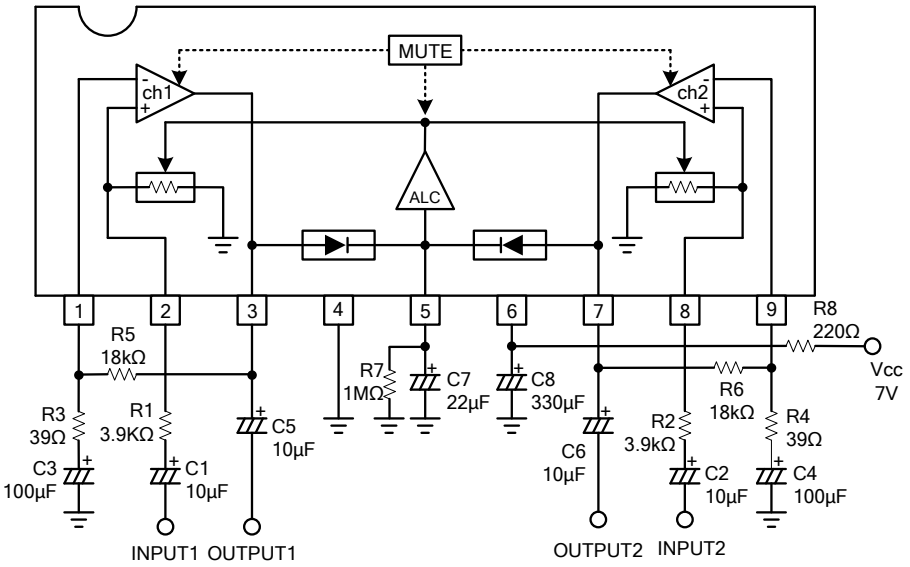
Note: This IC is not designed to be radiation-resistant.

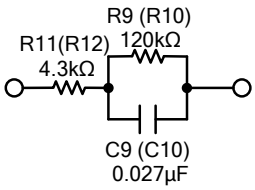
■ ELECTRICAL CHARACTERISTICS

(T_A = 25°C, V_{CC} =7.0V, f =1kHz and BPF: 20Hz ~ 20kHz, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Maximum Output Voltage	V_{OM}	THD=1%	0.6	1.2		V_{rms}
Input Conversion Noise Voltage	V_{NIN}	Conversion with R_g=2.2kΩ and NAB34dB at 1kHz		1.0	2.0	μV_{rms}
Quiescent Current	I_Q	V_{IN} =0Vrms	1.5	3.3	4.5	mA
Input Resistance	R_{IN}		15	31.5	45	kΩ
Total Harmonic Distortion	THD	NAB34dB, V_{OUT} =40mV_{rms}		0.1	0.3	%
Open Loop Voltage Gain	G_{VO}	V_{OUT} = −10dBV	70	80		dB
ALC Range	ALC	R_G =3.9kΩ, V_{IN} =−70dBV reference, THD=3%	40	70		dB
ALC Channel Balance	ΔALC	V_{IN} = −60dBV, −30dBV		0	2.5	dB
Channel Separation	CS	V_O =0dBV, NAB34dB	60	75		dB

■ TYPICAL APPLICATION CIRCUIT





For playback,instead of R5 and R6,connect the following NAB time constant circuit between pins 1 and 3 and 7 and 9.